Regional innovation systems, learning and knowledge flows - evidence from the Quebec wine industry

David Doloreux
Telfer School of Management, University of Ottawa, Ottawa, Canada, K1N 6N5
Doloreux@telfer.uottawa.ca

Sarah Ben Amor
Telfer School of Management, University of Ottawa, Ottawa, Canada, K1N 6N5
benamor@telfer.uottawa.ca

ABSTRACT
Many studies have brought forward the importance of knowledge generation, diffusion and application in the innovation process. Firms are increasingly relying on the use of external knowledge to gain access to diverse and complementary resources that are not available internally. In parallel, several studies concerned with the process of knowledge have also focused on the geography of firms’ knowledge flows. The core of the argument is that knowledge employed in the innovation process can come from different sources both inside and outside the region and that firms to remain competitive must therefore mostly rely on extra-regional sources of knowledge.

This paper examines how knowledge and geography are connected. The empirical analysis draws mostly on a survey of wineries in Canada. Three research questions arise from an in-depth examination of the influence that knowledge flows have on the innovation process of firms in the wine industry: the questions concern the extent to which wineries rely on external innovation sources (and the most important sources according to firms’ evaluation). The second research question focuses on the impact of external sources (variety of external channels and number of research ties) on firms’ innovativeness, by considering four innovation results (innovation, process, management and marketing). The third research question aims at analyzing whether knowledge circulating within the wine-producing region benefits more firms’ innovative performance than knowledge circulating outside.

The empirical focus of this paper is on the wine industry in the province of Quebec (Canada). Reasons for selecting this industry in this specific context are twofold. First, the wine industry has seldom been at the centre of the analysis even though it is recognized as a knowledge-intensive industry where knowledge plays a critical role in order to increase technological and economic return and to better exploit their resources and competences (Giuliani et al., 2011). It is also an industry where knowledge is strongly bounded to the territory, which could limit the possibility to use and exploit knowledge across borders or transcend geographically limited production areas.

Second, the Quebec’s wine region is a cool climate one and is not recognized as a significant player in the production of grapes and premium wine quality in Canada. Compared to other wine regions in Canada, Quebec's wine industry is non-competitive nationally speaking, for both geographic and economic reasons. Geographically, cold and inclement weather conditions
resulted in an uneven and weak set of cultivars and grapevines. Quebec is home to labrusca and hybrid grape varieties, grapes that differ from the Vitis vinifera grapes cultivated elsewhere in Canada. Economically, Quebec’s wine industry is dominated by small wineries, mostly family-owned, and challenged by a weak local demand for its wines as well as a weak level of productivity. In addition, there is an absence of a developed support infrastructure to help the industry access information and knowledge of leading practices, or practices related to its specific condition, which would help the industry be more competitive and innovative.

The remainder of this paper is organized as follows. In Section 2, we establish the theoretical framework and review the literature on innovation, the geography of knowledge-sourcing activities and RIS. Section 3 contains the analytical framework: after a brief description of some background information of the wine industry in Quebec, we discuss the sources of information and data used in the study. In Section 4, we present the findings on knowledge-based and innovation activities, knowledge sources activities and their spatial pattern. Finally, in Section 5 we summarize the key findings and draw some conclusions.